Saving West Coast and New Zealand Native Forests and Birds

By Gerry McSweeney

The 25-year period (1975-2000) was a time of major debate about the management of New Zealand native forests. The Institute of Foresters' position evolved during this period from initially arguing in support of status quo, to seeking forest protection and logging only where this could be done sustainably. The ancient age of most of the trees, particularly podocarps, compared to fast growing exotic plantation trees meant that any sustained supply of native timber would be small. On the West Coast, this volume was insufficient to keep the existing West Coast mills supplied with their traditional large wood volumes.

Under the 1986 West Coast Accord, the quantity of native timber available to the mills was substantially reduced as part of a West Coast sawmills transitioning to dominantly exotic timber. To ease this transition, throughout the 1990s the Government allowed its state owned enterprise, Timberlands, to overcut public forests. They removed native timber volumes well in excess of the sustainable supply. In 2002, Helen Clark's Labour led government halted all logging of publicly owned native forest on the West Coast.

As an ecologist closely involved in all stages of the conservation campaigns over that 25 year period, I pay tribute to everyone involved. We all championed our respective causes, debated passionately, listened to each other, adapted our positions and learned from each other. Ultimately we all accepted the final outcome. We did so without much of the bitter acrimony that has for example marked the Australian forest debates.

For the last 20 years I have lived most of my time on the West Coast and have been closely involved in nature tourism with our Wilderness Lodge group. Our focus has been to show that it is possible to create an eco tourism business that celebrates standing trees and their birds. Over that time the West Coast has evolved into a mixed economy. Here dairying, mining, tourism and a small amount of plantation forestry and fishing underpin a strong economy with relatively low unemployment.

The halting of Timberlands logging of public native forests stopped all native timber supplies from public land. Private native forests continue to supply some native timber under the sustainability provisions of the amended Forest Act. Even this has often proved problematic for the industry. The West Coast Development Trust, funded by $100 million of Government compensation money paid to offset the impact of the halting of native logging, initially supported and later owned the company "Forever Beech". This produced supplies of beech timber and proved unprofitable for the Trust. It recently was sold into private hands. Small scale native logging continues on private land. Even here some private loggers have been unable to resist the temptation to overcut their sustainable supply in breach of the Forests Act. In early August 2011, Glacier Sawmilling of Harihari was fined $133,000 in a case taken by the Ministry of Forestry.

Throughout the native forest debate, many West Coasters were adamant that logging was not as serious a threat to native forests and birds as was the threat from introduced pests. Their challenge to the forest conservation movement at the time was to put as much energy into fighting the pest threat as our organizations were putting into stopping native forest logging.

The West Coasters' challenge fell largely on deaf ears. Once the state native forests were legally protected many in the conservation movement moved on to new trendy environmental causes. West Coast native forest management was largely left to the Department of Conservation (DOC). Their pest control efforts have been better than those by DOC in the rest of New Zealand. However they have been patchy constrained in part by funding but perhaps more so by internal confusion about DOC's role. Job creation and developing community spirit through rat and stoat trapping programmes has often been more attractive to DOC than achieving whole ecosystem scale biodiversity restoration through effective pest control over large areas.

In June 2011, the Parliamentary Commissioner for the Environment (PCE) investigated the use of the sodium monofluoroacetate compound 1080 for pest control, and endorsed its use. She expressed the view that it should be used more widely if we are serious about addressing the serious pest threat to New Zealand indigenous biodiversity. DOC carries out a pest control over only 1 million hectares of the 8 million hectares of the NZ public land that it manages. The PCE called for more extensive use of 1080 by DOC.

Some people within the conservation movement working both within DOC and in the wider community have risen to address the pest challenge. Studies of the scale of the problem have revealed just

how disastrous introduced pests are for both birds and native vegetation. 95% of kiwi chicks are killed by stoats. For kaka parrots, females and chicks are being eliminated because stoats kill both in the tree holes where kaka nest. Powelliphanta giant land snails have been widely eliminated by possums. Whio/blue duck and North Island kokako have also been eliminated over big chunks of New Zealand by stoats. Rats have wiped out the South Island mohua/yellowhead from the northern and central South island over the last 30 years and mohua populations have crashed everywhere where there is no pest control.

Native plants are equally vulnerable to introduced pests even if their loss does not arouse as much public passions as does the loss of native bird species. A long term South Westland DOC study led by the late Phil Knightbridge found that wineberry and fuchsia are utterly vulnerable to possums. With no possum control, possum browse eliminated most of the monitored trees in the Jackson River over a 3 year period. (But at least these colonising tree species can regenerate). By contrast, Colenso's mistletoe, established and growing on its host silver beech trees for perhaps hundreds of years, was totally eliminated after 3 years without possum control. Once gone, it will never regenerate if there is no abundant mistletoe seed source. Ecology Division DSIR, working in South Westland in the early 1980s, found that kaka spent up to 60% of their time feeding on mistletoe during the plants spring-summer flowering period. This gave kaka the food boost needed to trigger their breeding.

The response to pests throughout NZ has tended to be a knee-jerk one. If stoats are seen as the problem, then stoat trapping is seen as the solution. DOC is now spending many millions of dollars on stoat trapping. It has also endorsed stoat trapping to the private sector which also sees stoat trapping as the solution and a noble way of getting involved in conservation. Unfortunately the scientific studies generally show that stoat trapping provides no sustainable or affordable long term solution to the pest problem. It is taking far too much time for that science to be heeded. More than perhaps any other issue, this perhaps highlights the current lack of science-based conservation leadership in New Zealand.

Rats and mice are the primary food of stoats in NZ forests. Rat and mouse numbers are determined by food availability particularly by the seed years of different native tree species. Stoat populations almost exactly mirror, with a slight time lag, the populations of rats and mice.

Stoats attack birds as a minor proportion of their diet, usually where their primary food source (rats, mice) is in decline following the ending of a tree seeding (mast) event.

Even where stoat trapping is used intensively it remains insufficient to combat stoats. At South Okarito forest, 3,000 stoat traps were maintained throughout the forest to save the Okarito brown kiwi. The claim was even made by the staff involved that this was the largest stoat trapping programme in the world. All Rowi/Okarito brown kiwi chicks born in the wild were still killed by the low number of stoats that survived the stoat trapping. Moreover the removal of many of the stoats triggered a huge explosion in the Okarito forest rat population. Stoat trapping has now been abandoned at Okarito in favour of aerial 1080 treatment.

Over the period September 4-5, 2011 all of Okarito forest was treated by an aerial 1080 operation run by DOC and the Animal Health Board. After 10 years of ineffective ground pest control methods, DOC finally accepted that at Okarito aerial 1080 operations are the only practical way that pest levels can be reduced low enough for bird breeding and forest regeneration.

Better understanding of the impact and interrelationships of introduced predators and pests has led to much smarter pest control techniques to combat them to save native forest and birds. At the forefront of these is the biodegradable chemical sodium monofluoroacetate – 1080. We now understand that integrated and synchronous pest control over large areas is economically and environmentally by far the best tool that we have available. It is not the ultimate solution. But it is the best we have right now and for the foreseeable future.

Moreover aerial 1080 operations can be extraordinarily effective. This is achieved by monitoring pest populations in relation to tree mast years, using a fleet of helicopters equipped with GPS technology to ensure no pest pockets are missed, selecting strategic times of the year and fine weather patterns and using pre feeding.

Aerial 1080 operations across the 25,000ha Waitutu forest in October 2010 eliminated over 99% of the stoats, rats and possums. The immediate post poison monitoring operations found virtually no surviving pest species where aerial 1080 was used. The only significant pest survival occurred on a 500 ha area near a tourist lodge where ground based methods were required to be used.

Where aerial 1080 has been used over large areas and repeated regularly, the results have also been astonishing. Populations of threatened birds have recovered to levels approaching those found on pest-free offshore islands.

The Moeraki Valley in South Westland where I live has received regular aerial 1080 treatment since 1998. The 11,000ha Abbey Rocks lowland forest between the Paringa and Moeraki Rivers received aerial 1080 treatment in 1998, 2002, 2007 and 2009. It is scheduled for further 1080 treatment in late September 2011. The treatment level of 1080 has been dropped to 2kg/ha, a 20th of the level used by the Forest Service in the 1960s further north on the West Coast.

The treatment cost has also come down with greater DOC experience. In South Westland the total 1080 application cost including supervision and monitoring is $12/hectare per treatment or approximately $6/ha/annum. At the same time the low 1080 application rate means that any deer kill is very low. The Moeraki Valley is alive with deer. This winter there have been at least 4 deer shot in a relatively small area of the lower Moeraki and deer browse is now a serious issue for forest regeneration here.

The South Westland Roar remains as popular as ever with NZ deerstalkers. Deerstalkers flock to these valleys every autumn from throughout New Zealand. Little do they realise that mighty hunting valleys like the Arawhata, Cascade, Waiatoto, Haast, Landsborough and the Thomas all get aerial 1080 treatment every 2-3 years and that this has been going on for the last 12 years or so.

Ongoing bird surveys in the Moeraki to Paringa forests since 2009 led by DOC scientist Graeme Elliott have found major increases in bird numbers in response to sustained pest control. Kaka numbers here are 9 times those of the similar beech podocarp lowland forests north of the Paringa River that have never had 1080 treatment. Elliott's "double blind" bird surveys are scheduled to continue for a further 3 years. There has been a huge measured increase in many bird species. Over 30 kaka are being radio tracked in the forest. In the 1080 treatment areas kaka are breeding and successfully fledging up to 4 chicks in each nest.

We have lived here for 22 years and in the last 13 years we have noticed a major increase in larger bird species such as NZ pigeon, kaka, kea, falcon, tui, whio/blue duck and morepork. Perhaps the most striking increase has been in the number of small birds such as bellbird, tit, fantail, rifleman and warbler. We guide dawn bird walks with our eco tourists every day. We are therefore acutely aware of changes in bird diversity and abundance. The regeneration response seen in vulnerable plant species such as rata, fuchsia, mistletoe and wineberry has been equally spectacular where deer numbers have been controlled.

If effective and sustained pest control can be achieved here over 14 years for $6 per hectare per annum, what are the prospects for expanding this programme across New Zealand?

300,000ha of West Coast forest, predominantly in Southern South Westland, is already under sustained pest control by DOC using aerial 1080. It is realistic to consider an ultimate goal of treating the forested portion of the whole 8 million hectares of DOC managed NZ public land. This would total an area perhaps 6 million hectares once you take out rock, snow, non forested tussock and wetlands. The costs for 1080 treatment of the whole 6 million hectares every 2 years would be $36 million annually or around 12.5% of the DOC current annual budget. The nett cost would be even lower if you subtract the present cost of all the ineffective stoat trapping operations.What a small price to pay to restore the full range of indigenous biodiversity to mainland NZ particularly when set against annual NZ tourism revenues in the order of $7 billion!

Gerry McSweeney has a Phd in Ecology and Range Management from Lincoln University 1984. He was Chairman of the Christchurch Branch of the Native Forests Action Council 1973-78. He was Park Naturalist, Westland National Park 1978-83 and Conservation Director of Forest and Bird 1983-1989. Since 1989 he and his wife Anne Saunders have developed and still own Wilderness Lodge Lake Moeraki and Wilderness Lodge Arthur's Pass.

Gerry is currently a Conservation Ambassador for Forest and Bird after serving as Forest and Bird's National President 2001-2005. He has served on the Government's Nature Heritage Fund 1990-2011 and has just been appointed to the NZ Conservation Authority.